

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

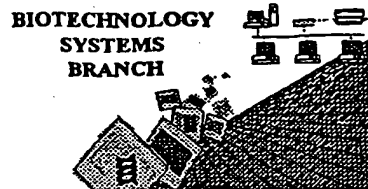
Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

**RAW SEQUENCE LISTING
ERROR REPORT**



The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/612,466
Source: OIPE
Date Processed by STIC: 8/11/2003

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<<http://www.uspto.gov/ebc/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry directly to:
U.S. Patent and Trademark Office, Technology Center 1600, Reception Area, 7th Floor, Examiner Name,
Sequence Information, Crystal Mall One, 1911 South Clark Street, Arlington, VA 22202
Or
U.S. Patent and Trademark Office, Box Sequence, Customer Window, Lobby, Room 1B03, Crystal Plaza Two,
2011 South Clark Place, Arlington, VA 22202
4. Federal Express, United Parcel Service, or other delivery service to: U.S. Patent and Trademark Office,

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/612,466

DATE: 08/11/2003

TIME: 13:38:59

Input Set : A:\1625seq.001

Output Set: N:\CRF4\08112003\J612466.raw

```
62 Asn Gly Tyr Met Arg Ile Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu
63                               95                               100                               105
65 aac tcc aac tcc act gag ttt gta agc ctg gcc agc aag gtg aag gac 388
66 Asn Ser Asn Ser Thr Glu Phe Val Ser Leu Ala Ser Lys Val Lys Asp
67                               110                               115                               120
69 gcg ctg aag ctg ctg tac agc gga gtc cca ttc ctg ggc ccc tac cac 436
70 Ala Leu Lys Leu Leu Tyr Ser Gly Val Pro Phe Leu Gly Pro Tyr His
71                               125                               130                               135
73 aag gag tgc gct gtg acg gcc ttc agc gag ggc agc gtc atc gcc tac 484
74 Lys Glu Ser Ala Val Thr Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr
75                               140                               145                               150
77 tac tgg tct gag ttc agc atc ccg cag cac ctg gtg gag gag gcc gag 532
78 Tyr Trp Ser Glu Phe Ser Ile Pro Gln His Leu Val Glu Glu Ala Glu
79                               155                               160                               165                               170
81 cgc gtc atg gcc gag gag cgc gta gtc atg ctg ccc ccg cgg gcg cgc 580
82 Arg Val Met Ala Glu Glu Arg Val Val Met Leu Pro Pro Arg Ala Arg
83                               175                               180                               185
85 tcc ctg aag tcc ttt gtg gtc acc tca gtg gtg gct ttc ccc acg gac 628
86 Ser Leu Lys Ser Phe Val Val Thr Ser Val Val Ala Phe Pro Thr Asp
87                               190                               195                               200
89 tcc aaa aca gta cag agg acc cag gac aac agc tgc agc ttt ggc ctg 676
90 Ser Lys Thr Val Gln Arg Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu
91                               205                               210                               215
93 cac gcc cgc ggt gtg gag ctg atg cgc ttc acc acg ccc ggc ttc cct 724
94 His Ala Arg Gly Val Glu Leu Met Arg Phe Thr Thr Pro Gly Phe Pro
95                               220                               225                               230
97 gac agc ccc tac ccc gct cat gcc cgc tgc cag tgg gcc ctg cgg ggg 772
98 Asp Ser Pro Tyr Pro Ala His Ala Arg Cys Gln Trp Ala Leu Arg Gly
99                               235                               240                               245                               250
101 gac gcc gac tca gtg ctg agc ctc acc ttc cgc agc ttt gac ctt gcg 820
102 Asp Ala Asp Ser Val Leu Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala
103                               255                               260                               265
105 tcc tgc gac gag cgc gcc agc gac ctg gtg acg gtg tac aac acc ctg 868
106 Ser Cys Asp Glu Arg Gly Ser Asp Leu Val Thr Val Tyr Asn Thr Leu
107                               270                               275                               280
109 agc ccc atg gag ccc cac gcc ctg gtg cag ttg tgt ggc acc tac cct 916
110 Ser Pro Met Glu Pro His Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro
111                               285                               290                               295
113 ccc tcc tac aac ctg acc ttc cac tcc tcc cag aac gtc ctg ctc atc 964
114 Pro Ser Tyr Asn Leu Thr Phe His Ser Ser Gln Asn Val Leu Leu Ile
115                               300                               305                               310
117 aca ctg ata acc aac act gag cgg cgg cat ccc ggc ttt gag gcc acc 1012
118 Thr Leu Ile Thr Asn Thr Glu Arg Arg His Pro Gly Phe Glu Ala Thr
119                               315                               320                               325                               330
121 ttc ttc cag ctg cct agg atg agc agc tgt gga ggc cgc tta cgt aaa 1060
122 Phe Phe Gln Leu Pro Arg Met Ser Ser Cys Gly Gly Arg Leu Arg Lys
123                               335                               340                               345
125 gcc cag ggg aca ttc aac agc ccc tac tac cca ggc cac tac cca ccc 1108
126 Ala Gln Gly Thr Phe Asn Ser Pro Tyr Tyr Pro Gly His Tyr Pro Pro
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/612,466

DATE: 08/11/2003
TIME: 13:38:59

Input Set : A:\1625seq.001
Output Set: N:\CRF4\08112003\J612466.raw

127		350		355		360	
129	aac att gac	tgc aca tgg	aac att gag	gtg ccc aac	aac cag cat	gtg	1156
130	Asn Ile Asp	Cys Thr Trp	Asn Ile Glu	Val Pro Asn	Asn Gln His	Val	
131		365		370		375	
133	aag gtg agc	ttc aaa ttc	ttc tac ctg	ctg gag ccc	ggc gtg cct	gcg	1204
134	Lys Val Ser	Phe Lys Phe	Phe Tyr Leu	Leu Glu Pro	Gly Val Pro	Ala	
135		380		385		390	
137	ggc acc tgc	ccc aag gac	tac gtg gag	atc aat ggg	gag aaa tac	tgc	1252
138	Gly Thr Cys	Pro Lys Asp	Tyr Val Glu	Ile Asn Gly	Glu Lys Tyr	Cys	
139	395		400		405	410	
141	gga gag agg	tcc cag ttc	gtc gtc acc	agc aac agc	aac aag atc	aca	1300
142	Gly Glu Arg	Ser Gln Phe	Val Val Thr	Ser Asn Ser	Asn Lys Ile	Thr	
143		415		420		425	
145	gtt cgc ttc	cac tca gat	cag tcc tac	acc gac acc	ggc ttc tta	gct	1348
146	Val Arg Phe	His Ser Asp	Gln Ser Tyr	Thr Asp Thr	Gly Phe Leu	Ala	
147		430		435		440	
149	gaa tac ctc	tcc tac gac	tcc agt gac	cca tgc ccg	ggg cag ttc	acg	1396
150	Glu Tyr Leu	Ser Tyr Asp	Ser Ser Asp	Pro Cys Pro	Gly Gln Phe	Thr	
151		445		450		455	
153	tgc cgc acg	ggg cgg tgt	atc cgg aag	gag ctg cgc	tgt gat ggc	tgg	1444
154	Cys Arg Thr	Gly Arg Cys	Ile Arg Lys	Glu Leu Arg	Cys Asp Gly	Trp	
155		460		465		470	
157	gcc gac tgc	acc gac cac	agc gat gag	ctc aac tgc	agt tgc gac	gcc	1492
158	Ala Asp Cys	Thr Asp His	Ser Asp Glu	Leu Asn Cys	Ser Cys Asp	Ala	
159	475		480		485	490	
161	ggc cac cag	ttc acg tgc	aag aac aag	ttc tgc aag	ccc ctc ttc	tgg	1540
162	Gly His Gln	Phe Thr Cys	Lys Asn Lys	Phe Cys Lys	Pro Leu Phe	Trp	
163		495		500		505	
165	gtc tgc gac	agt gtg aac	gac tgc gga	gac aac agc	gac gag cag	ggg	1588
166	Val Cys Asp	Ser Val Asn	Asp Cys Gly	Asp Asn Ser	Asp Glu Gln	Gly	
167		510		515		520	
169	tgc agt tgt	ccg gcc cag	acc ttc agg	tgt tcc aat	ggg aag tgc	ctc	1636
170	Cys Ser Cys	Pro Ala Gln	Thr Phe Arg	Cys Ser Asn	Gly Lys Cys	Leu	
171		525		530		535	
173	tcg aaa agc	cag cag tgc	aat ggg aag	gac gac tgt	ggg gac ggg	tcc	1684
174	Ser Lys Ser	Gln Gln Cys	Asn Gly Lys	Asp Asp Cys	Gly Asp Gly	Ser	
175		540		545		550	
177	gac gag gcc	tcc tgc ccc	aag gtg aac	gtc gtc act	tgt acc aaa	cac	1732
178	Asp Glu Ala	Ser Cys Pro	Lys Val Asn	Val Val Thr	Cys Thr Lys	His	
179	555		560		565	570	
181	acc tac cgc	tgc ctc aat	ggg ctc tgc	ttg agc aag	ggc aac cct	gag	1780
182	Thr Tyr Arg	Cys Leu Asn	Gly Leu Cys	Leu Ser Lys	Gly Asn Pro	Glu	
183		575		580		585	
185	tgt gac ggg	aag gag gac	tgt agc gac	ggc tca gat	gag aag gac	tgc	1828
186	Cys Asp Gly	Lys Glu Asp	Cys Ser Asp	Gly Ser Asp	Glu Lys Asp	Cys	
187		590		595		600	
189	gac tgt ggg	ctg cgg tca	ttc acg aga	cag gct cgt	gtt gtt ggg	ggc	1876
190	Asp Cys Gly	Leu Arg Ser	Phe Thr Arg	Gln Ala Arg	Val Val Gly	Gly	
191		605		610		615	

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/612,466

DATE: 08/11/2003
TIME: 13:38:59

Input Set : A:\1625seq.001
Output Set: N:\CRF4\08112003\J612466.raw

```

193 acg gat gcg gat gag ggc gag tgg ccc tgg cag gta agc ctg cat gct 1924
194 Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp Gln Val Ser Leu His Ala
195 620 625 630
197 ctg ggc cag ggc cac atc tgc ggt gct tcc ctc atc tct ccc aac tgg 1972
198 Leu Gly Gln Gly His Ile Cys Gly Ala Ser Leu Ile Ser Pro Asn Trp
199 635 640 645 650
201 ctg gtc tct gcc gca cac tgc tac atc gat gac aga gga ttc agg tac 2020
202 Leu Val Ser Ala Ala His Cys Tyr Ile Asp Asp Arg Gly Phe Arg Tyr
203 655 660 665
205 tca gac ccc acg cag tgg acg gcc ttc ctg ggc ttg cac gac cag agc 2068
206 Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu Gly Leu His Asp Gln Ser
207 670 675 680
209 cag cgc agc gcc cct ggg gtg cag gag cgc agg ctc aag cgc atc atc 2116
210 Gln Arg Ser Ala Pro Gly Val Gln Glu Arg Arg Leu Lys Arg Ile Ile
211 685 690 695
213 tcc cac ccc ttc ttc aat gac ttc acc ttc gac tat gac atc gcg ctg 2164
214 Ser His Pro Phe Phe Asn Asp Phe Thr Phe Asp Tyr Asp Ile Ala Leu
215 700 705 710
217 ctg gag ctg gag aaa ccg gca gag tac agc tcc atg gtg cgg ccc atc 2212
218 Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser Ser Met Val Arg Pro Ile
219 715 720 725 730
221 tgc ctg ccg gac gcc tcc cat gtc ttc cct gcc ggc aag gcc atc tgg 2260
222 Cys Leu Pro Asp Ala Ser His Val Phe Pro Ala Gly Lys Ala Ile Trp
223 735 740 745
225 gtc acg ggc tgg gga cac acc cag tat gga ggc act ggc gcg ctg atc 2308
226 Val Thr Gly Trp Gly His Thr Gln Tyr Gly Gly Thr Gly Ala Leu Ile
227 750 755 760
229 ctg caa aag ggt gag atc cgc gtc atc aac cag acc acc tgc gag aac 2356
230 Leu Gln Lys Gly Glu Ile Arg Val Ile Asn Gln Thr Thr Cys Glu Asn
231 765 770 775
233 ctc ctg ccg cag cag atc acg ccg cgc atg atg tgc gtg ggc ttc ctc 2404
234 Leu Leu Pro Gln Gln Ile Thr Pro Arg Met Met Cys Val Gly Phe Leu
235 780 785 790
237 agc ggc ggc gtg gac tcc tgc cag ggt gat tcc ggg gga ccc ctg tcc 2452
238 Ser Gly Gly Val Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Ser
239 795 800 805 810
241 agc gtg gag gcg gat ggg cgg atc ttc cag gcc ggt gtg gtg agc tgg 2500
242 Ser Val Glu Ala Asp Gly Arg Ile Phe Gln Ala Gly Val Val Ser Trp
243 815 820 825
245 gga gac ggc tgc gct cag agg aac aag cca ggc gtg tac aca agg ctc 2548
246 Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro Gly Val Tyr Thr Arg Leu
247 830 835 840
249 cct ctg ttt cgg gac tgg atc aaa gag aac act ggg gta ta gggggccgggg 2599
250 Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn Thr Gly Val
251 845 850 855
253 ccacccaaat gtgtacacct gcggggccac ccacgtgcc cccagtggt cagcctgca 2659
254 ggctggagac tggaccgctg actgcaccag cgccccaga acatacactg tgaactcaat 2719
255 ctccagggt ccaaactctgc ctagaaaacc tctcgcttcc tcagcctcca aagtggagct 2779
256 gggaggtaga aggggaggac actggtggtt ctactgaccc aactgggggc aaagggttga 2839

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/612,466

DATE: 08/11/2003
TIME: 13:38:59

Input Set : A:\1625seq.001
Output Set: N:\CRF4\08112003\J612466.raw

```

257 agacacagcc tccccgccca gcccgaagct gggccgaggc gcgtttgtgt atatctgcct 2899
258 cccctgtctg taaggagcag cgggaacgga gcttcggagc ctcctcagtg aaggtggtgg 2959
259 ggctgccgga tctgggctgt ggggcccttg ggccacgctc ttgaggaagc ccagggtcgg 3019
260 aggaccctgg aaaacagacg ggtctgagac tgaaattgtt ttaccagctc ccagggtgga 3079
261 cttcagtggtg tgtatttgtg taaatgggta aaacaattta tttcttttta aaaaaaaaaa 3139
262 aaaaaaaaaa 3147
264 <210> SEQ_ID NO: 2
265 <211> LENGTH: 855
266 <212> TYPE: PRT
267 <213> ORGANISM: Homo Sapien
269 <400> SEQUENCE: 2
270 Met Gly Ser Asp Arg Ala Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe
271 1 5 10 15
272 Gly Ala Gly Leu Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu
273 20 25 30
274 Glu Glu Gly Val Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu
275 35 40 45
276 Lys His Gly Pro Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly
277 50 55 60
278 Leu Leu Leu Val Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln
279 65 70 75 80
280 Tyr Arg Asp Val Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile
281 85 90 95
282 Thr Asn Glu Asn Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu
283 100 105 110
284 Phe Val Ser Leu Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr
285 115 120 125
286 Ser Gly Val Pro Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr
287 130 135 140
288 Ala Phe Ser Glu Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser
289 145 150 155 160
290 Ile Pro Gln His Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu
291 165 170 175
292 Arg Val Val Met Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val
293 180 185 190
294 Val Thr Ser Val Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg
295 195 200 205
296 Thr Gln Asp Asn Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu
297 210 215 220
298 Leu Met Arg Phe Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala
299 225 230 235 240
300 His Ala Arg Cys Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu
301 245 250 255
302 Ser Leu Thr Phe Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly
303 260 265 270
304 Ser Asp Leu Val Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His
305 275 280 285
306 Ala Leu Val Gln Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr
307 290 295 300

```

10/6/2466

<210> SEQ ID NO 21
<211> LENGTH: 103
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<213> Homo Sapien

<220> FEATURE:
<223> OTHER INFORMATION: :
<400> SEQUENCE: 21

Val Ser Arg Leu Val Ile Ser Ile Arg Leu Pro Gln His Leu Gly Leu
1 5 10 15
Arg Pro Pro Leu Ala Leu Leu Glu Leu Ser Ser Arg Val Glu Pro Ser
20 25 30
Pro Ser Ala Leu Pro Ile Cys Leu His Pro Ala Gly Ile Pro Pro Gly
35 40 45
Ala Ser Cys Trp Val Leu Gly Trp Lys Glu Pro Gln Asp Arg Val Pro
50 55 60
Val Ala Ala Ala Val Ser Ile Leu Thr Gln Arg Ile Cys Asp Cys Leu
65 70 75 80
Tyr Gln Gly Ile Leu Pro Pro Gly Thr Leu Cys Val Leu Tyr Ala Glu
85 90 95
Gly Gln Glu Asn Arg Cys Glu
100

which response is the valid one?

If it is "Artificial Sequence" include <220>-<223>

section
and explanation
of source
material on
<223> line

<210> SEQ ID NO 22
<211> LENGTH: 37
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<213> Homo Sapien

<220> FEATURE:
<223> OTHER INFORMATION: :
<400> SEQUENCE: 22

Asn Asp Ser Arg Trp Ser Leu Leu Cys Gln Glu Glu Gly Thr Trp Phe
1 5 10 15
Leu Ala Gly Ile Arg Asp Phe Pro Ser Gly Cys Leu Arg Pro Arg Ala
20 25 30
Phe Phe Pro Leu Gln
35

same error